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Dynamic pricing in evolving revenue system: A hybrid review and integrative framework for future research directions

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ABSTRACT

This study reviews dynamic pricing in digitally mediated markets, incorporating hybrid review approach comprising systematic literature review adhering to SPAR-4-SLR, BERTopic, bibliometric, content analysis, and multimodal critical discourse analysis. It examines how dynamic pricing influences consumer behaviour, like strategic waiting, reference price formation, fairness perceptions and willingness to pay. Using Theory-Context-Constructs and Methods (TCCM) framework, this study analyses how technological advancements like artificial intelligence, real-time analytics and platform-based systems shape pricing practices and user responses. The conceptual model developed supports decision-makers in designing transparent and sustainable pricing strategies by helping firms optimize performance by balancing revenue with fairness and trust.

Keywords: Dynamic pricing, hybrid review, TCCM framework, BERTopic, conceptual model

1. INTRODUCTION

Dynamic pricing is essential in modern revenue systems, adjusting prices based on demand, competition, and digital markets while considering consumer willingness to pay, inventory, and capacity (Prakash et al., 2022; Katz et al., 2025). Initially used in airlines and hotels, technological advances now extend to public services, platform markets, retail, and transportation (Alderighi et al., 2022; Xu et al., 2025; Pade et al., 2022). It uses data analytics, AI, and algorithms, leveraging real-time data and machine learning to adjust prices and enhance profitability and utilization within revenue management systems (Benoit et al., 2020; Mohammed & Basak Denizci, 2025; Prakash et al., 2022).

Dynamic pricing offers efficiency benefits but raises behavioural, ethical, and institutional concerns. Consumer judgments depend on price, fairness standards, and trust (Malc et al., 2016; Benoit et al., 2020; Pade et al., 2022). Transparency enhances acceptance, while opaque surge pricing and personalized discrimination create impressions of unfairness, exploitation, and privacy issues (Alderighi et al., 2022; Xu et al., 2025). These perceptions affect willingness to pay, purchase intention, and loyalty, impacting revenue sustainability. Consumers are strategic, learning to react to price fluctuations by procrastinating and waiting strategically (Benoit et al., 2020; Mohammed & Basak Denizci, 2025). Discount anticipation shifts demand during strong margins and declines long-term profitability (Hou et al., 2024; Famil Alamdar, 2024). This shows a trade-off between short-term revenue and long-term stability.

Dynamic pricing raises concerns when applied to necessities and essential services for the population. Price gouging, algorithmic collusion, discrimination, and consumer protection are noted issues (Nikseresht et al., 2024; Benoit et al., 2020). There is growing literature in operations research, economics, marketing, and public policy, but it remains diverse, focusing on optimisation, regulation, and consumer responses. Earlier research identifies key

dimensions (Jia et al., 2024; Xu et al., 2025), but a unified structure of interconnecting mechanisms, market situations, stakeholder reactions, and revenues remains to be established.

Gaps existed in time and contexts. Literature combining optimisation-based pricing processes with behavioural reactions is scarce. No longitudinal synthesis exists on how dynamic pricing has changed with digitalisation and AI use. Legitimacy, sustainability, and institutional, ethical, and regulatory forces are ambiguous in mainstreaming paradigms. The existing literature is quantitatively rich, while studies using qualitative or discourse-based methods to capture societal perceptions of dynamic pricing are limited.

To address these gaps, this research adopts a hybrid review approach comprising a systematic literature review, bibliometric, content analysis, and multimodal critical discourse analysis. The following research questions were proposed:

RQ1: What dominant patterns and thematic structures characterise the evolution of dynamic pricing research across industries over the last twelve years?

RQ2: How do pricing mechanisms, market conditions, and stakeholder responses interact to shape outcomes in dynamic pricing systems?

RQ3: What roles do institutional, ethical, and contextual forces play in shaping the legitimacy and sustainability of dynamic pricing practices in evolving revenue structures?

This study is a comprehensive synthesis of dynamic pricing research that integrates technological, behavioural, and institutional perspectives and proposes an integrative framework that advances understanding of a sustainable revenue system.

2. LITERATURE REVIEW

Researchers analysed dynamic pricing in marketing, operations, and public policy, viewing it as an optimization problem balancing demand and supply through algorithmic adjustments. It has evolved from a revenue-focused computational task to a socio-technical system shaped by technology, consumer understanding, and regulations (Prakash et al., 2022; Mohammed & Basak Denizci, 2025).

2.1 Dynamic Pricing as a Technology-Enabled Revenue System

Data analytics, AI systems and real-time processing drive dynamic pricing (Nikseresht et al., 2024). Predicting and learning demand through data can enable algorithmic pricing, enhancing efficiency in demand and supply (Mohammed & Basak Denizci, 2025; Prakash et al., 2022). Machine learning and AI allow for frequent changes and tailored pricing. Motive factors are real-time data, AI systems, adjustment frequency, and personalization. Automated engines enhance capacity utilisation (Mohammed & Basak Denizci, 2025), and technological sophistication improves execution (Prakash et al., 2022). Transparency and ethics significantly shape consumer response (Benoit et al., 2020; Nikseresht et al., 2024).

2.2 Pricing Encounter: Consumer Cognitive and Behavioural Responses

Consumers actively interpret and provide input on price differentiation rather than passively accept it (Yuniarto et al., 2024). In the pricing encounter, they compare prices using

reference points, fairness norms, and trust algorithms (Malc et al., 2016; Alderighi et al., 2022). The reference price theory explains how benchmarks are set based on past experiences, affecting willingness to pay through price deviations (Prakash et al., 2022; Yuniarto et al., 2024; Famil Alamdar, 2024). Booking.com evidence indicates transparency reduces perceived unfairness (Alderighi et al., 2022), and nostalgia may mitigate negative reactions (Pade et al., 2022). Effectiveness depends on perceptions of fairness, trust, and legitimacy.

2.3 Strategic Consumer Behaviour and Learning Effects

Consumers identify pricing trends and avoid purchases during high-price periods (Hou et al., 2024; Famil Alamdar, 2024), reducing demand during low-profit periods. Dynamic pricing maximizes short-term revenue and predicts patterns but undermines long-term results (Ge & Li, 2024). Consumer responses, beyond algorithmic responses, are affecting firms' pricing decisions (Mohammed & Basak Denizci, 2025). Trust erosion and strategic waiting affect the link between pricing and firm performance (Wei et al., 2024).

2.4 Firm-Level Outcomes: Efficiency versus Sustainability

The literature highlighted in operations and revenue management include revenue, profitability, capacity utilization, and pricing effectiveness (Datta et al., 2025). Dynamic pricing improves load factors and revenue per unit (Mohammed & Basak Denizci, 2025; Katz et al., 2025) while stabilizing perishability and demand uncertainty. The willingness to pay decreases over time due to fairness and strategic behaviour (Hou et al., 2024). Managers can manipulate pricing to maintain relationships and trust (Benoit et al., 2020); these methods align with efficiency and sustainability.

2.5 Ethical Legitimacy, Governance, and Institutional Forces

Ethical and regulatory issues highlight price gouging, algorithmic collusion, discrimination, and price invasion (Nikseresht et al., 2024; Benoit et al., 2020). Regulatory control and governance influence the pricing of necessities and government services. Xu et al., (2025) examine how signalling and information disclosure affect audit fee judgment. Governance mechanisms impact acceptance, with pricing guided by institutional rules (Kurdhi et al., 2023). Dynamic pricing and marketing rely on ethics and transparency to impact market welfare.

2.6 Contextual Factors: Industry, Perishability, and Demand Uncertainty

Existing literature establishes that industries differ in dynamic pricing effectiveness and acceptance. Price variability is preferred in airlines and hospitality due to high perishability and demand uncertainty (Katz et al., 2025). Retail and platform market resistance is noted due to repeated exposure and personalization (Alderighi et al., 2022). The link between pricing determinants and outcomes is affected by uncertainty and perishability (Yuniarto et al., 2024).

2.7 Fragmentation and Need for an Integrative Framework

Many studies exist, but literature remains fragmented. Operations research explores optimization models; public policy investigates regulation and ethics; marketing emphasizes

fairness and trust. Researchers proposed a unified framework integrating pre-pricing drivers, pricing experience determinants, and post-pricing outcomes. Isolated elements include reference prices (Prakash et al., 2022), fairness perceptions (Malc et al., 2016), AI pricing systems (Mohammed & Basak Denizci, 2025), and ethical issues (Nikseresht et al., 2024). Limited synthesis exists on how these elements interact within broader revenue systems across industries and time.

3. RESEARCH METHODOLOGY

This study employs a multi-method qualitative approach, featuring a systematic literature review, thematic analysis, BERTopic analysis, bibliometric analysis, content analysis, and multimodal critical discourse analysis. A systematic literature review identified themes, theories, and context, following the SPAR-4-SLR protocol, which involves assembling, arranging, and assessing articles (Paul et al., 2021). This method ensured the review was transparent, thorough, and trustworthy. To enhance transparency, independent and dependent variables from 368 peer-reviewed articles were extracted for theme development, construct mapping, and framework synthesis (see **Annexure 1**). BERTopic identified themes and developed research directions (Grootendorst, 2022). A bibliometric analysis focused on authors' keyword co-occurrence and bibliographic coupling by author and country to map intellectual structure, thematic evolution, and knowledge diffusion patterns (Donthu et al., 2021). Fourth, to validate the factors from the hybrid review, content analysis and multimodal critical discourse analysis of expert views on dynamic pricing were conducted using publicly available data from YouTube. Hundreds of videos were reviewed; only the top 20 were selected based on views, likes, comments, publishing date, and duration. All stages' findings were compared using abductive reasoning to explain the mechanisms behind observed themes and stakeholder reactions.

3.1 Assembling of the articles

Studies on dynamic pricing in social science literature were identified within a 10–15-year timeframe (Petticrew and Roberts, 2008), matching the 12-year window (2014–2025). Articles were retrieved from Scopus using “AND” and “OR,” resulting in 807 articles filtered by top journal categories (A*, A, B- as per ABDC indexing). These categories ensure methodological rigour, peer review, and robustness, essential for a reliable conceptual framework (Paul et al., 2021). Scopus includes influential, peer-reviewed journals, enabling search, filtering, citation tracking, bibliometric analysis, and thematic mapping (Paul et al., 2024). No WoS papers were included, as most WoS journals are indexed in Scopus (Mongeon & Adèle, 2016).

3.2 Arranging the articles

Stage two focuses on arranging and refining the article. Articles were categorized by publication trends, key papers and journals, country distribution in developed and emerging nations, keyword analysis, and thematic analysis, leading to a comprehensive examination of dynamic pricing. Articles were excluded during purification for these reasons: duplicates (124),

availability (63), book chapters (71), unrelated themes (159), and non-English (22). 368 peer-reviewed papers were included.

3.3 Assessing the articles

Stage three evaluates selected articles using a hybrid review approach comprising systematic literature review, thematic analysis, BERTopic, bibliometric analysis, content analysis and multimodal critical discourse analysis. The TCCM framework (Paul & Alexander Rosado-Serrano, 2019) identifies key theories, contexts, constructs, and methodologies, highlighting areas for improvement. The report includes figures and tables showing limitations, such as focusing only on English-language articles, which may exclude other significant factors.

(*Figure 1 about here*)

4. SYSTEMATIC REVIEW RESULTS

Thematic analysis of the articles followed the search protocol and adhered to the SPAR-4-SLR protocol (Paul et al., 2021). Dynamic pricing insights reveal eight themes.

(*Table 1 about here*)

Table 1 presents a thematic analysis of dynamic pricing, offering a multidisciplinary and evolving research structure. It specializes in nonlinear, continuous, and heuristic pricing optimization models to enhance profit margins and manage volatility. The other theme addresses consumer behaviour, fairness, and perception, focusing on biases, trust, and reference price. Recent methods use personalised AI-based pricing via data segmentation and reinforcement learning. It is used in hospitality, tourism, transportation, supply chains, and perishable goods. Emerging markets include energy, sustainability, and platform markets, linking dynamic pricing, smart grids, auctions, and digital ecosystems.

To validate findings from thematic analysis following the SPAR-4-SLR protocol (Paul et al., 2021), topic modelling in Python identified significant keywords and scores in dynamic pricing, complemented by word cloud analysis of topic-specific keywords.

(*Figure 2 about here*)

Figure 2 shows the prevalence of key themes in the pricing dynamics study. Revenue and pricing management tactics are crucial, with pricing mechanisms categorized into auctions and information. Dynamic pricing uses algorithmic models and efficiency, highlighting technology-driven approaches. Consumer behaviour includes willingness-to-pay and elasticity; fairness and ethics focus on trust and societal issues. AI and machine learning propel digital transformation via prediction and automation. It applies to sustainability, supply chain, tourism, and hospitality. Histogram analysis reveals themes in revenue management and strategy, pricing mechanisms, consumer behaviour, and varying depth in fairness and tourism.

(*Figure 3 about here*)

Figure 3 presents the topic-wise word cloud analysis of dynamic pricing, featuring seven clusters. Management highlights price, revenue, fairness, and profitability. Pricing mechanisms involve information and continuous pricing, indicating analytical approaches. Dynamic pricing strategies emphasize strategic, demand, and product indicators. Consumer behavior includes willingness and choice. Sustainability and supply chain emphasize profit and environmental efficiency. Machine learning and AI include models, optimization, and learning. The ethics cluster highlights fairness, trust, and transparency, whereas tourism is sector-specific.

5. BIBLIOMETRIC ANALYSIS

The systematic review featured thematic analysis, topic modelling, and bibliometric analysis of 368 peer-reviewed articles from Scopus. Analysis employed VOS viewer software to assess authors' keywords, co-occurrences, and classify key studies into main clusters (Visser et al., 2021). Bibliographic coupling showed study relatedness via shared references (Small & Koenig, 1977). This analysis aimed to validate the themes from the systematic literature review and BERTopic analysis. This approach identified intellectual structure, thematic evolution, and knowledge diffusion patterns (Donthu et al., 2021).

(*Figure 4 about here*)

Figure 4 analyses key terms in pricing and revenue management, highlighting clusters such as dynamic pricing, costs, revenue management, and willingness to pay. The red cluster includes consumer-related themes like price fairness, personalized pricing, and consumption behaviour. The blue cluster addresses optimisation issues like price optimisation and decision support. The green cluster includes reference pricing, demand uncertainty, and supply chain management, while the purple cluster emphasises strategic consumer behaviour, pricing strategies, and game theory, demonstrating strong integration between concepts.

(*Figure 5 about here*)

Figure 5 illustrates bibliographic coupling of authors in pricing and revenue management, emphasizing collaboration patterns and reference sharing among clusters. The red cluster features key authors Perakis Georgia, Wan Xuan, Liu Weijiong, and Cleophas Catherine, who contributed to dynamic pricing. The green cluster includes Noone Jeffrey M, Erdemir Mehmet, Chien Chen-Chien, and van der Rest Jean Pierre I, focusing on hospitality and service pricing. The blue cluster features Zhang Jianxi, Tang Weihseng, and Hu Qiang, concentrating on quantitative modelling. The yellow cluster focuses on Wittman Michael D. and Belobaba Peter P. in airline pricing.

(*Figure 6 about here*)

Figure 6 shows dynamic pricing by country and relationships. The US leads in research and partnerships with Western and Asian economies. China connects Hong Kong, Singapore, Australia, and Japan. Germany, France, and the UK demonstrate excellent European cooperation. Canada, South Korea, and Australia connect the Western and Asian clusters. Emerging countries like India contribute little, indicating a research gap. The figure shows a connected world with the US and China as key hubs.

(*Figure 7 about here*)

Figure 7 presents bibliographic coupling in dynamic pricing, emphasizing key academic outlets and their connections. The Journal of Revenue and Pricing Management excels in dynamic pricing research. Business Research, International Journal of Hospitality Management, and Journal of Air Transport Management support the industry. Methodological foundations are found in the European Journal of Operational Research, Operations Research, and Management Science; technology is covered in Computers and Industrial Engineering and IEEE Access. The figure illustrates that dynamic pricing connects management, operations, technology, and industry applications.

(*Figure 8 about here*)

Figure 8 shows a thematic analysis of dynamic pricing, categorizing topics by relevance and development. Themes include costs, dynamic pricing, and sales. Further research is required on revenue management, willingness-to-pay, and price discrimination. Price optimisation and electronic commerce are niche themes with limited connections. New or fading areas include airline revenue management, distribution capacity, and assortment optimization. Consumption behaviour, strategic approaches, and tourism are increasingly emphasizing interdisciplinary, consumer-oriented methods, indicating a shift towards more integrated research.

(*Figure 9 about here*)

Figure 9 illustrates the thematic evolution of dynamic pricing from 2014-2021 to 2022-2025, emphasizing more advanced areas. Costs, algorithmic pricing, willingness to pay, reference effects, price optimization, simulation, and revenue management formed the foundation of the previously established field. Later studies examine game theory, consumer behavior, artificial intelligence, prediction, and data privacy. This change is data-driven and consumer-focused, utilizing advanced technology that supports digital transformation and responsible, algorithm-based pricing.

6. CONTENT ANALYSIS

YouTube video content analysis assesses information to identify trustworthy content and eliminate misleading ones (Parabhoi et al., 2021). Research on dynamic pricing examines consumer perception of price signals, including ratings, disclosures, and personalized pricing (Alderighi et al., 2022). This study's analysis of expert videos will provide insight into the application of dynamic pricing and contextualisation in real life.

(*Table 2 about here*)

Table 2 shows a dynamic pricing content analysis from YouTube videos, outlining the drivers, mechanisms, and implications. The key themes include revenue optimization, market efficiency, demand-responsive pricing, and capacity utilization, illustrating how companies can align prices with demand. Automation, predictive analytics, AI, and ML enable real-time, personalized pricing. Consumer behaviour varies in willingness to pay, highlighting issues of unfairness, transparency, and regulation, and contrasting profitability with trust. They apply to

travel, hospitality, retail, and entertainment, encountering issues such as backlash, price exploitation, and algorithmic collusion.

(*Figure 10 about here*)

Figure 10 shows the semantic network of dynamic pricing, highlighting core themes and their connections. It highlights dynamic pricing in the industry. Revenue optimization and market efficiency involve demand-responsive pricing and consumer behaviour, emphasizing willingness to pay and fairness. Technology-driven pricing, such as predictive analytics and AI, involves regulatory, ethical, and implementation issues, highlighting innovation and governance. Consumer backlash, algorithmic collusion, and technical complexity highlight dynamic pricing as a technical, managerial, consumer-focused, and ethically sensitive practice.

(*Figure 11 about here*)

Figure 11 shows the bigram word cloud analysis of dynamic pricing, emphasizing common words and associations. Dynamic pricing allows for real-time price changes in response to demand surges and peak times, emphasizing responsiveness. Market forces indicate supply, demand, prices, and conditions. Behavioural aspects encompass customer trust, willingness to pay, and price sensitivity. Strategic targets include revenue optimization, profit maximization, and competitive pricing, alongside governance factors like regulatory scrutiny and ethical pricing, showing that dynamic pricing is multidimensional.

7. MULTIMODAL CRITICAL DISCOURSE ANALYSIS

Multimodal critical discourse analysis reveals concealed power, ideology, and societal meaning through language, visuals, sound, and narratives that shape interpretation on digital sites (Joy et al., 2024). Modern research analyzes complex multi-semiotic writings through multimodal discourse (Mansouri et al., 2023). This method started in advertising and marketing research, offering categories for exploring and validating economic practices digitally. Research applies it in communication dimensions. Abstract meaning is expressed through semiotic metaphors and symbolic representations (Joy et al., 2024; Mansouri et al., 2023). Visual and character focus emphasizes identity construction and power relations (Mansouri et al., 2023). Persuasive communication includes linguistic and sonic tactics, such as tone and audio indicators (Joy et al., 2024). Narrative structures create meaning (Chen et al., 2025), and emotional responses are expressed through emotional registers (Wang, 2023). Framing and representation generate ideological meanings (Windels et al., 2020). It identified six parameters: semiotic metaphor, visual focus, linguistic strategy, narrative pattern, emotional register, and ideological message (Joy et al., 2024; Mansouri et al., 2023; Chen et al., 2025; Wang, 2023; Windels et al., 2020). This study uses this analysis to examine pricing communication and legitimation.

(*Table 3 about here*)

8. THEORIES, CONTEXTS, CONSTRUCTS AND METHODS (TCCM) FRAMEWORK

The TCCM framework by Paul & Alexander Rosado-Serrano, (2019) provides conceptual relevance, contextual diversity, key variables, and methodological rigour for literature reviews. It outlines theories, contexts, constructs, and methods in pricing, revenue management, and algorithmic decision-making (see **Table 4**). Main theories include revenue management, dynamic pricing, reference price, behavioural economics, prospect theory, strategic consumer behaviour, inventory and pricing, price fairness, and operations research. New ideas such as algorithmic pricing, base rate learning, bounded rationality, social learning, network effects, platform competition, sustainability, ethics, and social welfare remain unexplored.

The framework outlines how pricing mechanisms, reference effects, fairness perceptions, algorithmic systems, and strategic behaviour influence revenue, demand, willingness to pay, trust, welfare, and efficiency. Key independent variables are dynamic pricing policies, inventory-based pricing, AI systems, strategic waiting, and governance factors. The dependent variables reflect economic and behavioural outcomes. Research types are quantitative (92.91%), mixed-methods (3.67%), reviews (2.36%), and qualitative studies (1.05%). The research covers developed and emerging markets across various industries but requires greater cross-cultural integration and theory synthesis.

(*Table 4 about here*)

The TCCM framework insights show that dynamic pricing studies encompass various theories, situations, and approaches. Syntheses of effects on customer perceptions and optimization practices are in systematic reviews, while conceptual frameworks and practical implications were presented elsewhere (Talón et al., 2022). This study combines thematic analysis, BERTopic, bibliometrics, semantic networks, content analysis, and discourse analysis to systematically map themes and outcomes (see **Table 5**).

(*Table 5 about here*)

Table 5 maps dynamic pricing research by synthesizing SLR, thematic analysis, BERTopic, content analysis, and the TCCM framework. It is based on literature on dynamic pricing and revenue management. Key factors include price intensity, adjustment degree, and capacity mechanisms affecting revenue, profitability, and forecasting in sectors. AI-based pricing improves decision-making speed and accuracy compared to traditional models and human calculations. Studies of consumer behaviour indicate fair-mindedness and increased mistrust regarding price differences to reference points. Strategic consumer research indicates discount anticipation and demand shifts, while industry analysis highlights regulatory, ethical, and contextual pressures on results.

9. DISCUSSION

This study identifies mechanisms of dynamic pricing and develops a framework explaining pricing functions in evolving revenue systems. The study aimed to connect optimisation-oriented pricing research with behavioural and institutional factors affecting long-

term revenue sustainability. Dynamic pricing is a studied revenue maximization tool, but research on the combined effects of technological capability, consumer interpretation, and legitimacy on outcomes is limited (Prakash et al., 2022). Studies have explored dynamic pricing using isolated methods like optimisation modelling, behavioural response analysis, and policy-oriented examinations, leading to fragmented explanations centred on revenue efficiency or fairness perceptions (Benoit et al., 2020; Nikseresht et al., 2024; Jia et al., 2024). Some review studies provide insights, focusing on perspectives like optimisation logic or customer reactions, without integrating technological, behavioural, and institutional mechanisms into a unified view (Talón et al., 2022). This study uses a multi-method qualitative approach, including a systematic review with the SPAR-4-SLR protocol (Paul et al., 2021), BERTopic, and bibliometric analysis to identify dominant patterns. The TCCM framework (Paul & Alexander Rosado-Serrano, 2019) identifies theories, constructs, context, and methods, validated through content analysis and multimodal critical discourse analysis of expert opinions on dynamic pricing. This method tackled three research questions. The analyses showed the intellectual evolution of the domain, highlighting a shift from optimisation-centred modelling to behavioural and governance-oriented research, supporting RQ1. Thematic and BERTopic analyses revealed that pricing outcomes arise from interactions between algorithms, consumers, and market conditions. Predictive pricing drives consumer learning, strategic waiting, and reference price formation, impacting revenue sustainability and addressing RQ2. Content analysis and multimodal critical discourse analysis revealed that identical pricing mechanisms are accepted when framed as coordination but resisted when viewed as exploitation, clarifying legitimacy and sustainability outcomes for RQ3. These findings were synthesized by mapping themes using SLR, BERTopic, video analysis, and TCCM (see **Table 5**). The evidence suggests that dynamic pricing serves as a socio-technical coordination mechanism (see **Figure 12**). The conceptual model's relationships were interpreted through abductive reasoning, revealing underlying mechanisms of stakeholder behaviour beyond descriptive themes. Dynamic pricing theory (Gallego & van Ryzin, 1994) emphasizes the link between predictive pricing and purchase delay, showcasing strategic consumer behaviour (Besanko et al., 1990) and intertemporal decision logic (Frederick et al., 2002) as consumers modify purchase timing in response to expected price changes. Price variability acceptance is explained by reference price theory (Helson, 1964) and prospect theory (Kahneman & Tversky, 1979), showing that evaluations depend on deviations from expected value, not absolute price levels. These perspectives show that dynamic pricing serves as a market coordination institution, rather than merely an optimisation tool. Algorithmic efficiency, institutional legitimacy, and behavioural adaptation shape revenue outcomes, leading to a sustainability paradox where short-term optimization may harm long-term profitability. This study combines technological, behavioural, and governance mechanisms into a unified system, previously seen in revenue management research as isolated optimization. An adaptive relational system governs relationships among firms, consumers, and markets.

(*Figure 12 about here*)

Figure 12 presents a framework for dynamic pricing, including pre-pricing drivers, encounter mechanisms, and post-pricing outcomes. Strategy is influenced by pre-pricing factors like

pricing intensity, frequency, AI adoption, data integration, transparency, personalization, and ethics, which differ by industry and market uncertainty. During the encounter stage, price execution influences perceptions of fairness, reference assessment, trust, strategic waiting, and legitimacy. These are arbitraged by aligning accuracy with demand and supply. Moderators encompass regulation, governance, data quality, trust, and expectations. Dynamic pricing is a multi-stage process that affects firm performance, consumers, and society in its post-pricing outcomes.

10. IMPLICATION OF THE STUDY

This study has important implications for revenue managers, pricing strategists, platform operators, and policymakers by reframing dynamic pricing as a socio-technical coordination system rather than a standalone optimization tool. The conceptual model (see **Figure 12**) shows that sustainable revenue performance depends on algorithmic efficiency, consumer trust, and regulatory legitimacy. Pricing intensity, adjustment frequency, AI forecasting, and real-time data integration must balance transparency, communication strategies, and ethical safeguards. Managers should prioritize explainable pricing logic, visible demand signals, and governance thresholds over short-term margins. Consumer learning and strategic waiting reduce long-term profitability during price volatility; firms should manage adjustment frequency and anticipation effects with controlled discounts and expectation management. In platform and essential goods markets, implementing price-gouging safeguards, oversight, and fairness communication is crucial to avoid backlash. Policymakers can use the model to create oversight that maintains market efficiency through transparency, accountability, and consumer protection. Aligning automation with behavioural acceptance enhances revenue stability, brand protection, and sustainable digital markets.

This study advances the revenue and pricing management literature by integrating theory and clarifying the mechanisms underlying dynamic pricing outcomes. It extends dynamic pricing theory (Gallego & van Ryzin, 1994) beyond probabilistic optimization by including behavioural adaptation and legitimacy formation as internal factors affecting revenue. The model combines strategic consumer behaviour theory (Besanko et al., 1990), intertemporal decision logic theory (Frederick et al., 2002), reference price theory (Helson, 1964), and prospect theory (Kahneman, 1979) to explain how predictive pricing influences expectation formation, fairness evaluation, and willingness to pay over time. The conceptual model (see **Figure 12**) frames dynamic pricing as a socio-technical system, linking technological drivers, behavioural mediators, and institutional moderators to outcomes at firm, consumer, and societal levels. The TCCM Framework (Paul & Alexander Rosado-Serrano, 2019) enables the integration of theories, contexts, constructs, and methods, addressing fragmentation in dynamic pricing by providing a structured foundation for theory development and empirical validation across industries.

This study challenges the dominance of single-method quantitative modelling in dynamic pricing research by incorporating a multi-method qualitative approach, including

systematic literature review, BERTopic, bibliometric analysis, content analysis, and multimodal critical discourse analysis to go beyond optimisation-based explanations and develop a conceptual model. Combining hybrid review with expert insights, it offers a structured approach to connect pricing mechanisms with behavioural and institutional dynamics, providing a blueprint for future research moving toward cumulative theory-building and empirically testable system-level frameworks.

11. CONCLUSION

This study explores the development, process, and validity of dynamic pricing using a hybrid review method, confirmed through content analysis and multimodal critical discourse analysis, and proposes an integrative conceptual theory on sustainable revenue systems. It examines the relationship between techno-capability, consumer perception, and institutional authenticity, while earlier studies focused on individual performances related to optimisation efficiency or behavioural fairness. The hybrid review includes 368 articles, using the SPAR-4-SLR protocol, BERTopic, bibliometric analysis, and TCCM to organize theories, constructs, contexts, and methods. The study integrates consumer behaviour (Besanko et al., 1990), intertemporal decision logic (Frederick et al., 2002), reference price (Helson, 1964), and prospect theory (Kahneman, 1979) to offer insights on predictive pricing influences regarding anticipation, trust, and regulatory scrutiny. Performance depends on algorithmic effectiveness, behavioural modulation, and legitimacy protection. The conceptual model (**Figure 12**) links technology drivers, pricing mechanisms, and performance, aiding managers in balancing responsiveness, transparency, and governance.

Content analysis and multimodal critical discourse analysis show that communication methods for pricing and responses to it can differ, with results varying based on framing and perceived fairness. The study has limitations: the literature review examined studies from the Scopus database published in English, potentially excluding grey literature. Future scope is shown in **Table 6**.

(*Table 6 about here*)

Table 6 indicates that future studies on dynamic pricing should go beyond traditional revenue models to incorporate technological, behavioural, and ethical aspects. We must prioritize algorithm transparency and explainability in AI and machine learning. Algorithmic pricing should be fair, trusted, and transparent for consumers and regulators. Personalized pricing raises fairness concerns and potential backlash. Strategic consumer learning and intertemporal decision-making influence demand and long-term revenue. Compare airlines, hospitality, retail, and digital platforms. Future research should address price gouging, algorithmic collusion, data quality, bias, and platform governance.

Declaration of Competing Interests

The authors state that no conflicts of interest exist. The author also mentions that the QuillBot professional AI tool is utilized for refining and enhancing writing.

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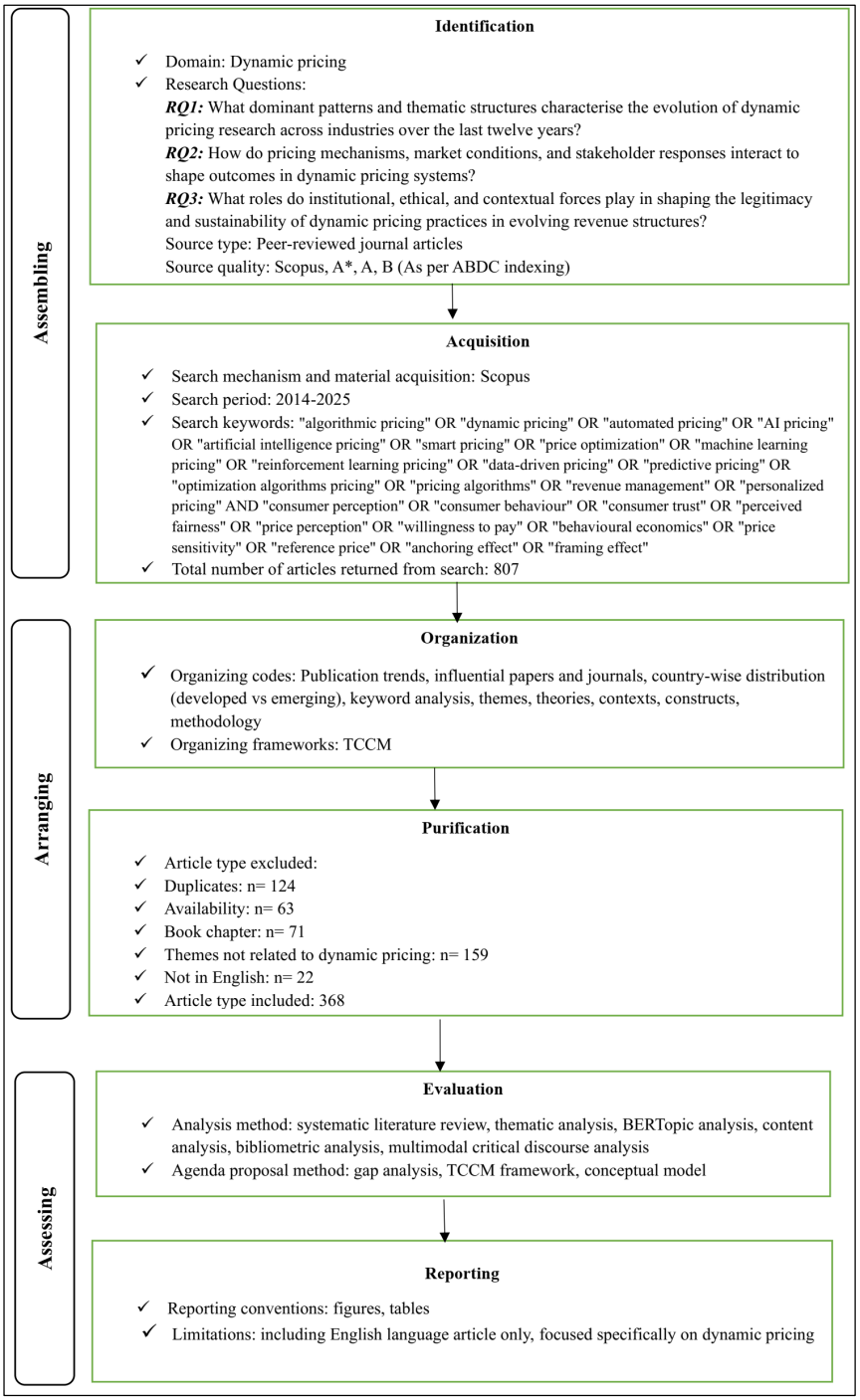


Figure 1. SPAR-4-SLR Protocol

Source- Adapted from Paul et al., (2021)

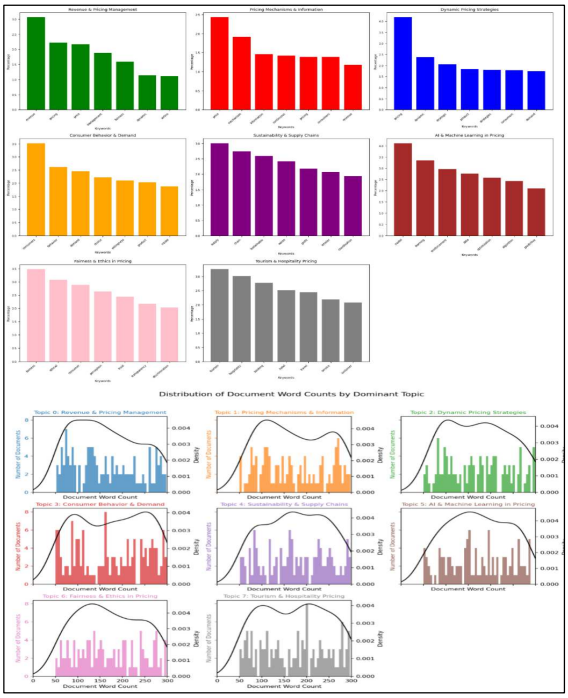


Figure 2. Topic-wise keyword score and distribution of document word count of dynamic pricing

Source- Authors' own work

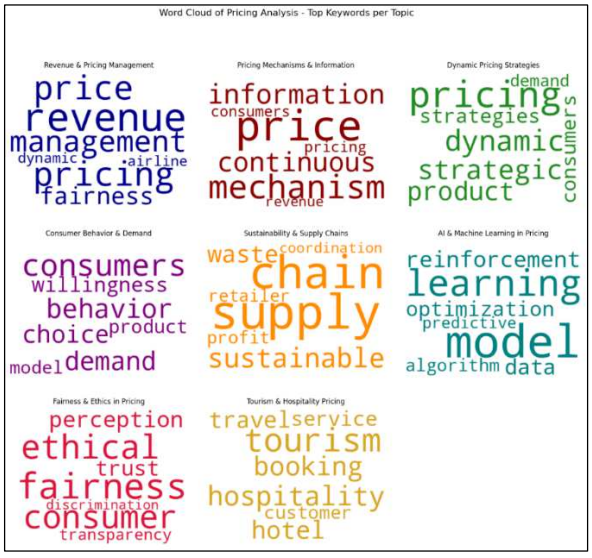


Figure 3. Topic-wise word cloud analysis of dynamic pricing

Source- Authors' own work

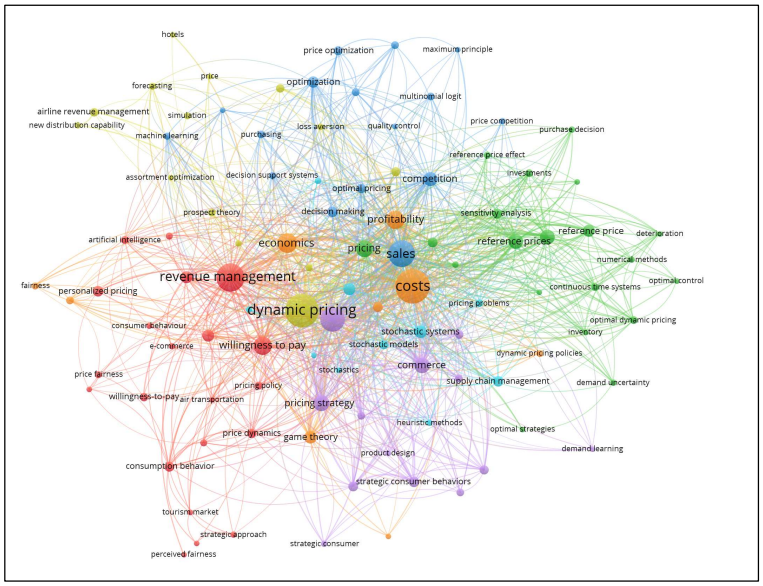


Figure 4. Authors keyword

Source- Authors' analysis using VOS viewer

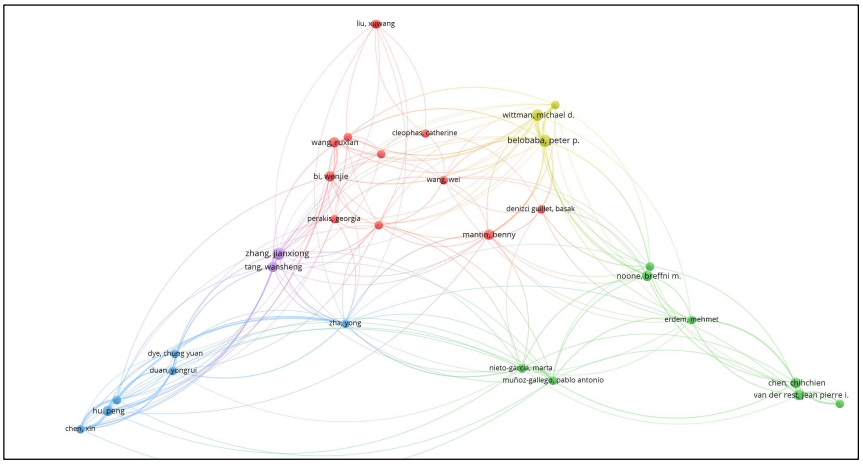


Figure 5. Bibliographic coupling

Source- Authors' analysis using VOS viewer

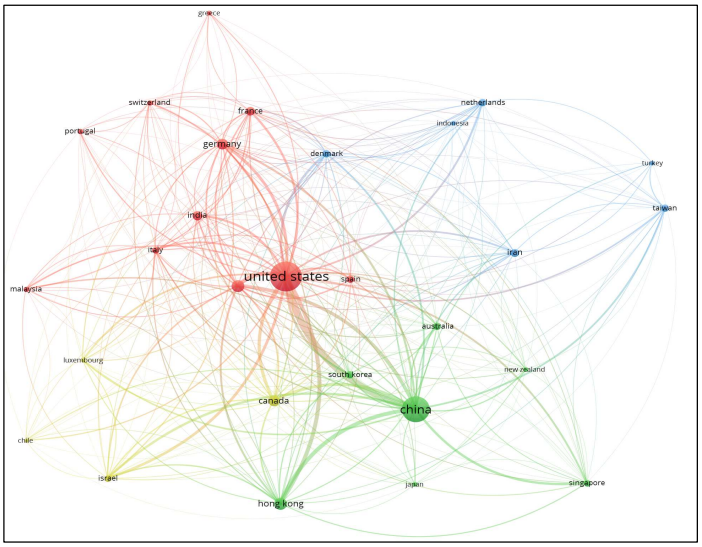


Figure 6. Country-wise analysis of dynamic pricing

Source- Authors' analysis using VOS viewer

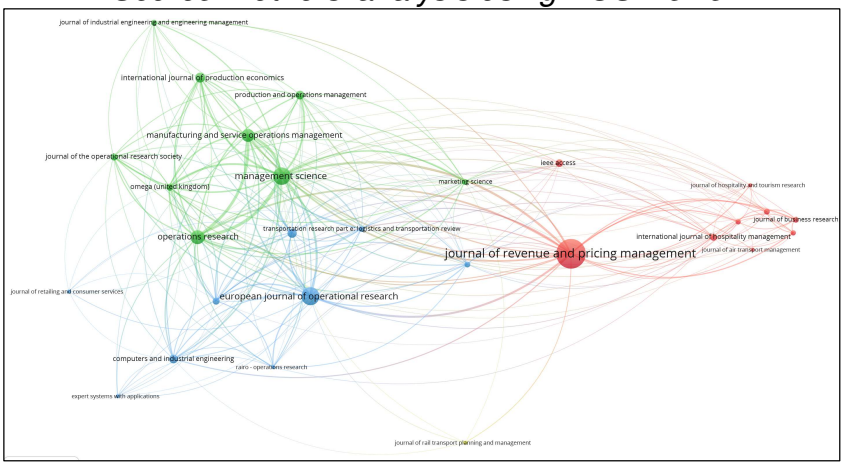


Figure 7. Journal-wise bibliographic coupling of dynamic pricing

Source- Authors' analysis using VOS viewer

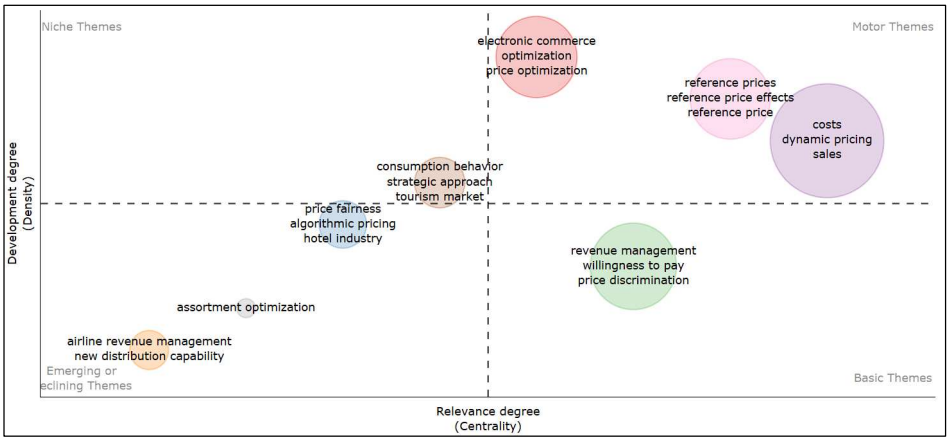


Figure 8. Thematic map of prominent terms in dynamic pricing

Source- Authors' own work

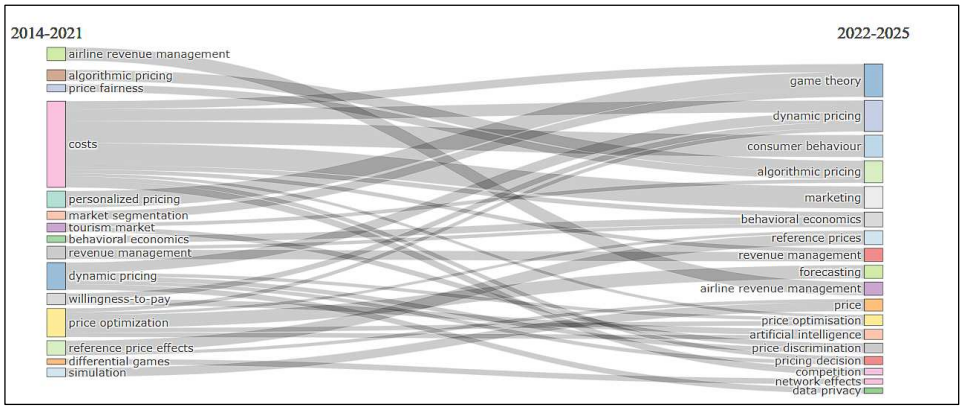


Figure 9. Thematic evolution of dynamic pricing

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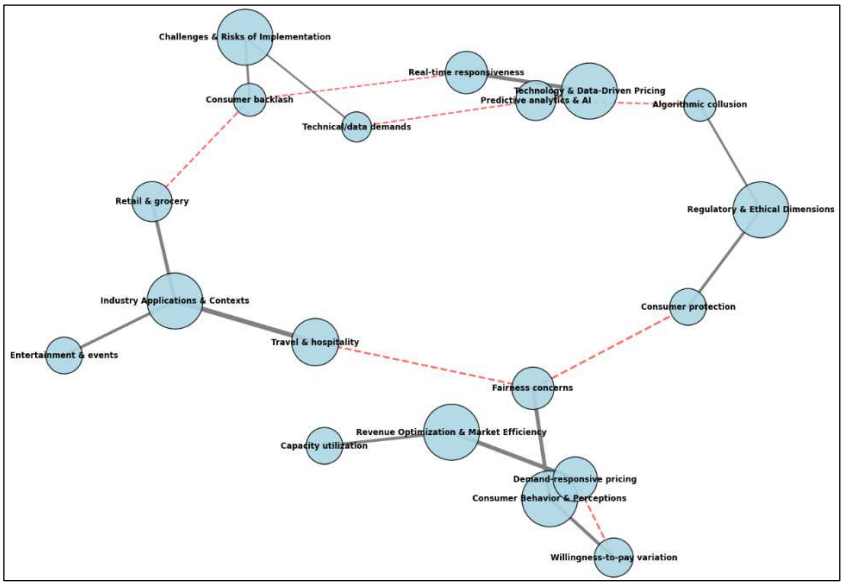


Figure 10. Semantic Network of Dynamic Pricing Themes (Direct & Indirect Relations)

Source- Authors' own work

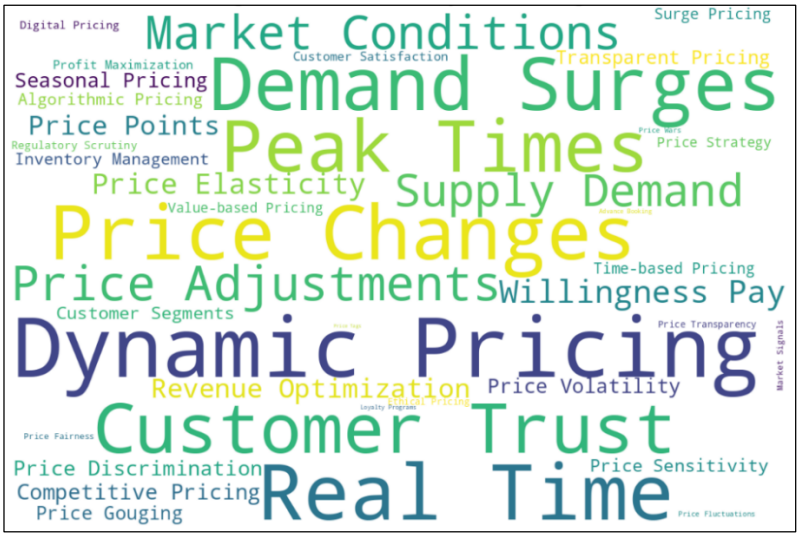


Figure 11. Bigram Word Cloud for Dynamic Pricing

Source- Authors' own work

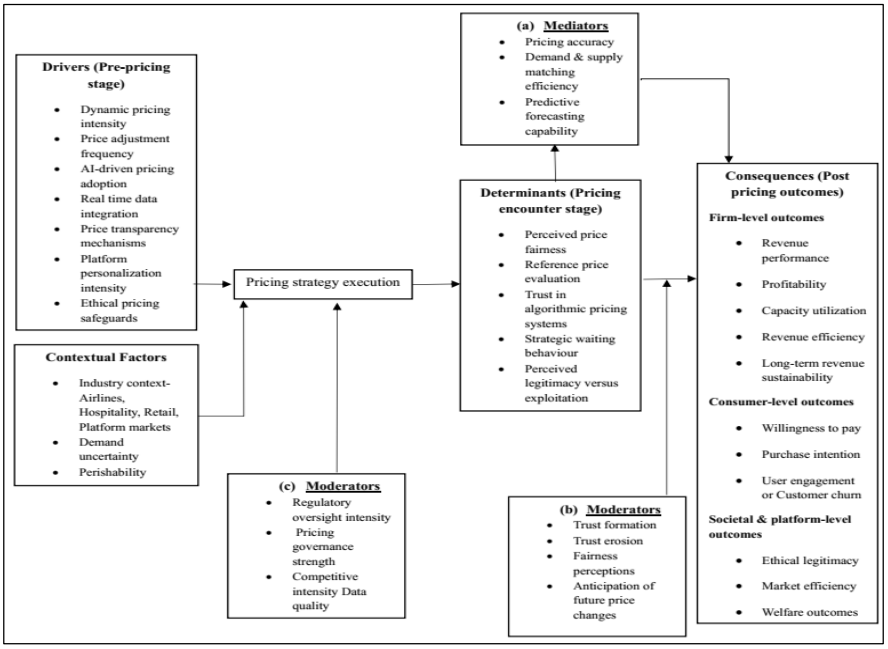


Figure 12. Conceptual model on dynamic pricing

Source- Authors' proposed model

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